

Creating or Destructing Value in Use? Handling Cognitive Impairments in Co-Creation with Serious and Chronically Ill Users

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ABSTRACT

Theoretically based on public service logic (PSL) this article addresses how users' cognitive impairments can affect co-creation processes and value outcomes in a public sector environment and how the service providers can handle this issue. It directs attention to value creation in the context of vulnerable and unwilling service users and contributes to understanding how cognitive gaps between public health care services and users inhibit value co-creation. Based on qualitative interview data findings substantiate that cognitive impairments reduce the users' health literacy and therefore affect both their ability and willingness to participate in co-creation. The study recognizes that there is a built-in asymmetry between the involved actors and that failing to reduce this asymmetry through adequate facilitation by the service providers can result in co-destruction of value in use. It is acknowledged that the users might not be cognitively able to determine whether they actually come better or worse off in the end. Therefore it is suggested that the service provider might need to play a larger role in determining what is positive or negative value in use. Hence this article adds to PSL by clearly emphasizing the key role played by public service organizations (PSOs) in facilitating the value creation process which takes place during service delivery.

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1. INTRODUCTION

Co-creation of value during delivery of health care services receives a great deal of attention (Hardyman et al.2015;McColl-Kennedy et al.2012;Osei-Frimpong et al.2015).

It is assumed that the synergies between the users and the providers in the design and delivery of public services pave the way for the establishment of a co-creating partnership which is able to enhance the process of value creation (Pestoff 2012;Voorberg et al.2015). When the patient's knowledge and experience are appreciated and used in conjunction with the professional competence in developing the services these services will be better provided for the end-users (Ministry of Health and Care Services 2017;NOU 2011). Nevertheless some challenges of co-creation seem to be somewhat neglected especially when it comes to users with serious and chronic illnesses. As pointed out by Zainuddin et al. (2016) patients or users need to make behavioral or cognitive contributions to cocreate value. Therefore they need to have the proper knowledge skills and motivation to do so (Kaarremo and Käsäkoski 2018). If the health care organization's knowledge is communicated poorly and the knowledge resources of the patients and their families are inadequate there is a high risk for ineffective collaboration resulting in value co-destruction (Frow et al.2016). Hence the possibility of negative value outcomes should be acknowledged. Value creation in the interaction between citizens and public administration can refer to the creation of public value (Bryson et al.2017;Meynhardt 2009). Other scholars direct attention to value for the individual service users (Capolupo et al.2019;Grönroos et al.2015;Grönroos and Voima 2013;Hardyman 2017;Hardyman et al.2015;Palumbo and Manna 2018). This article follows the latter direction responding to requests for empirical studies of value-in-use which take into consideration both the positive and negative nature of the concept (Medberg and Grönroos 2020). Focusing on the interaction between the individual user and the health care provider it also responds to calls for empirical analyses of value co-

creation in micro-level patient encounters (Hardyman et al.2015; Joiner and Lusch 2016;Osei-Frimpong et al.2015;Sweeney et al.2015). The study is theoretically based on public service logic (PSL) (Alford 2016;Osborne 2010;Osborne et al.2018) applying its understanding of value creation and value in use (Grönroos 200820112019; Grönroos et al.2015;Grönroos and Voima 2013).

The following research questions are addressed:

- How do cognitive impairments affect users' ability and willingness to participate in value co-creation?
- How do public service providers handle this co-creation and how can they facilitate the creation of value in use in this context?

Drawing on a study of users with neurological conditions in the municipal health care services the article addresses how the users' cognitive impairments can affect co-creation processes and value outcomes and how the service providers can handle this issue. By doing so attention is directed to knowledge gaps concerning value creation in the context of vulnerable and unwilling service users as pointed out in the literature (Dietrich et al.2017; Osborne2018). It contributes to understanding how cognitive gaps between public health care services and users inhibit value co-creation. An understanding identified as unclear by scholars (Kaartemo and Käsäkoski 2018;Palumbo 2016). Furthermore it adds to PSL by drawing attention to the key role played by public service organizations (PSOs) and frontline service staff in facilitating the value creation process which takes place during service delivery.

The term "neurological conditions" refers to disorders and diseases in the nervous system (Ministry of Health and Care Services 2011). Some muscle diseases are also included in the definition (The Norwegian Medical Association 2007). Most common in the Norwegian municipal health care services are multiple sclerosis Parkinson's disease stroke epilepsy and brain or spinal cord injuries. People in this group often have complex needs which frequently include cognitive manifestations (Fure 2008;Hämäläinen and Rosti-Otajärvi 2016;Iaffaldano et al.2014;Sharbafshaaer 2018;Yang et al.2016). This reinforces the understanding that the development and provision of services to these users should take their needs and situation into consideration strongly underlining the importance of user involvement in both. On the other hand users may experience challenges due to the severity of the symptoms and cognitive manifestations originating from their conditions.

The Norwegian Ministry of Health and Care services states that the health care services must take into account the users' abilities and prerequisites in its organizational and service development. This includes making it easier for users to find the right service offerings and that these are customized to the user (Ministry of Health and Care Services 2019). Pointing to the service providers' responsibility to support ease of access and engagement by eliminating barriers it also shifts the burden of responsibility from the users to the service provider (McCormack et al.2017).

This article is structured into five main sections. First it presents the theoretical approach based on PSL including how value co-creation and co-destruction is understood in this context. Second it describes the methodological approach including the sample and settings and how the data collection and analyses were conducted. Third the empirical findings are presented such as the occurrence of cognitive impairments among the users how these impairments are expressed and how the service providers facilitate co-creation with the users at the individual level. Fourth it discusses the findings focusing on implications on co-creation and value in use. Lastly it draws some conclusions and presents some limitations of the study.

2. THEORETICAL APPROACH

2.1. Public Service Logic

PSL introduces a break with the New Public Management (NPM) inspired school of thought in public management theory and practice (Alford 2016;Osborne 2010 2018) suggesting that value is co-created by PSOs and users in addition to third parties (Osborne 2018;Osborne et al.2016;Osborne and Strokosch 2013). According to PSL the service users create the value of public service with PSOs acting as a facilitator of this process. The users do this by integrating the service offering of the PSO with their needs personal abilities and experiences and their societal context (Grönroos 2019;Osborne 2018;Skålén et al.2015). They may invite the service providers to engage with them in their value creation implying that the users not the providers are in charge of value creation.

Hence it is not a matter of the service users co-creating value with the service organization but rather the opposite way around. PSL therefore understands the service user as the basic unit of analysis (Osborne2018). This challenges more paternalistic and asymmetric approaches to engagement that are provider-determined rather than patientor co-determined (cf.Thompson 2007). The PSL approach also shifts the focus away from the performance of the public service organizations as the key metric of successful services and instead articulates value as the key metric and purpose of such services (Osborne 2018). In this context services can be understood

in the meaning “to help someone’s relevant processes such that his or her goal achievement is enabled in a way that is valuable to him or her” (Grönroos 2019 pp. 777–78). The emphasis on goal achievement seems to presuppose some level of user intention and awareness. However individuals may not always have clear pre-determined conceptions of their goals or they may be unwilling to participate (Grönroos 2019; Osborne 2018) which demonstrates that different types of actions are required by the service provider depending on the situation (Grönroos 2019) setting the frame for this study.

2.2. *Co-Creation Value and the Importance of Health Literacy*

A discussion of services through interaction between the public services and the users leads us to the concept of co-creation. It refers to a resource integration process between the provider and the customer (Aarikka-Stenroos and Jaakkola 2012; Vargo and Lusch 2008). Osborne (2018) points out that co-creation assumes an interactive and dynamic relationship where value is created at the nexus of interaction. The value thus is created by this interaction occurring within the context of the service user’s wider life experience (Grönroos 2011; Grönroos and Voima 2013).

The literature pertaining to value is vast with definitions of value spanning across many disciplines (Ng and Smith 2012; Ramsey and Schickedanz 2010). A common feature in all definitions is that value is recognized as a multidimensional concept (Hardyman 2017). The importance of specific attributes however varies depending on the perspective of the individual or organization (Boztepe 2007; Ramsey and Schickedanz 2010).

PSL centers on value to individual service users the public and society (Alford 2016). Focusing on outcomes for the individual end-user this article understands value as value in use. The nature of value in use is the extent to which the user feels better off (positive value) or worse off (negative value) (Grönroos and Voima 2013). As pointed out by several authors value creation thus entails a process that increases the customer’s (or in this case the user’s) well-being (Grönroos 2008; Grönroos and Voima 2013; Vargo et al. 2008). Grönroos and Voima (2013) identify that when the value is perceived this way value creation becomes an ongoing process that emphasizes the user’s experiences logic and ability to extract value out of products and other resources used. Understanding value this way also directs our attention to the importance of context (Eriksson 2019; Kaartemo and Käsäkoski 2018). Value in context emphasizes the importance of time and place dimensions and network relationships in the creation and determination of value. This indicates the necessity to understand how patients have different needs and how their access to resources in a service system varies in contexts (Vargo et al. 2008).

Directing attention to ability and access to resources in co-creation with vulnerable and cognitively impaired users underscores the importance of the user’s health literacy. Baker (2006) defines health literacy as “the degree to which individuals have the capacity to obtain process and understand basic health information and services needed to make appropriate health decisions.” Palumbo and Manna (2018) explore positive and negative concerns of value creation in the patient–provider relationship presenting individual health literacy as a critical requisite for success in these processes. In contrast problematic health literacy is considered to hinder the establishment of collaborative relationships between the patients and the health care professionals producing patient disengagement (Porr et al. 2006). Low health literacy also prevents the opportunity to fill the cognitive gaps that are produced by inadequate individual skills through the establishment of clear and comfortable relationships with the providers of care (Hironaka and Paasche-Orlow 2008). The side effects of inadequate health literacy are particularly significant for people suffering from multiple chronic conditions (Hardyman et al. 2019). Studies have also shown that patients may be unwilling to participate in the provision of care due to the physical and psychological weaknesses that are associated with the illness (Arnetz et al. 2008).

Research on co-creation typically has been based on an assumption that it is a harmonious process resulting in positive outcomes (Grönroos and Gummerus 2014; Vafeas et al. 2016). However the significance of individual health literacy suggests some possible challenges in the context of vulnerable and cognitive impairment users which again leads to the possibility of failed interaction processes.

2.3. *Co-Destruction and Failed Interaction*

Although the creation of value is the goal for any co-creation process scholars have acknowledged that such a goal is not always realized. Sometimes these processes might even produce undesired effects (Echeverri and Skålén 2011; Engen et al. 2020; Pié and Cáceres 2010). Value co-destruction implies a notion that relationships and interactions do not always result in positive or value-creating outcomes. Sometimes they even result in negative outcomes (Echeverri and Skålén 2011; Pié and Cáceres 2010). Pié and Cáceres (2010 p. 431) define value co-destruction as “an interaction process between service systems that results in a decline in at least one of the system’s wellbeing” which given the nature of a service system can be individual or organizational. Thus co-destruction captures the diminishment of value for one or more actors that are involved in direct interactions with each other (Engen et al. 2020). In accordance with defining value as value in use this article refers to co-destruction as a failed interaction process that has a negative outcome resulting in a decline in the users’ wellbeing.

Previous studies of co-destruction have called for the need for studies in different fields to provide a more comprehensive picture of the phenomenon (Echeverri and Skålén 2011; Prior and Marcos-Cuevas 2016; Vafeas et al. 2016). Alford (2016) identifies that any collaborative action with the end-users of public services is likely to have positive and negative effects on the value created. However still little is known about its distinguishing attributes and its consequences including deeper insight into value co-destruction in the public sector environment. This is especially true dealing with the provision of health services (Palumbo et al. 2016).

Plé and Cáceres (2010) argue that the involvement of users in the delivery process may entail value co-destruction rather than value co-creation. This is most likely to happen when either the user the provider or both participate in the design and delivery of services adopting conflicting perspectives bringing incongruent inputs and aiming at the achievement of diverging ends (Smith 2013). Co-destruction can also emerge due to reasons such as insufficient or absence of information (Vafeas et al. 2016) or when the actors involved do not possess certain resources (Smith 2013). In the health care environment this can be related to factors such as patients lacking the knowledge skills experience and expertise to be effectively involved leading to inequity in access to care (Thomson et al. 2005) which underpins the argument that problematic health literacy increases the likelihood of co-destruction.

The responsibility of public services is to support ease of access and engagement by eliminating barriers (Ministry of Health and Care Services 2019) which clarifies the relevance of PSL's goal of exploring how public services can be designed to facilitate value creation of service users in accordance with Osborne (2018). The importance of handling problematic individual health literacy in this context underlines the point made by Grönroos (2019) that different types of measures are required by the service provider depending on the situation.

3. MATERIALS AND METHODS

3.1. Design Sample and Settings

The study had a qualitative design combining data from in-depth interviews and group interviews in two strategically chosen municipalities in Norway. Municipalities are the lowest administrative and political organizational level in Norway. As of 1 January 2020 there are 356 municipalities in Norway with differing sizes and demography (Ministry of Local Government and Modernisation 2020).

The cases were chosen from a total of 13 municipalities that received a grant from the Norwegian Directorate of Health through Neuroplan 2015 (Ministry of Health and Care Services 2011). The plan was based on the recognition that the care services were not adequately designed and adapted for people with neurological conditions. This meant that changes in the care service's competence working methods service content and professional focus were considered necessary. The aim was to strengthen the academic breadth of the municipal service offering with a stronger emphasis on activation rehabilitation and assistance in everyday life so that it met the needs of the user group (Ministry of Health and Care Services 2011). The plan had two three-year development programs one for day and activity programs and one for adapted training programs for people with neurological conditions. The target groups for measures in the former program were users and relatives while only users were listed as the target group for the second program. Under the two programs managed by the Directorate of Health grants were awarded for 19 projects divided into 13 municipalities. Overall 10 of the projects received grants for the development of day and activity programs and nine projects received grants for customized training programs.

Choosing from these 13 cases insured that the included municipalities had made an actual effort to develop services for the target group. They were strategically chosen for diversity because they represented two typical and very different local communities in Norway. The first municipality includes one of Norway's 15 largest cities according to the number of inhabitants (+60000). The second is in a rural region with about 6000 inhabitants. They are geographically spread with one located in the northern part of the country and one in mid-Norway. The first municipality developed a day and activity service while the other developed a customized training program.

A contact person in each municipality recruited the individual respondents according to a set of pre-set criteria. Users had to be in the age span 18–70 years old with a neurological condition. They had to receive municipal services or have received this earlier due to their neurological condition. Relatives had to be close relatives to users with neurological conditions meaning the users' spouse child parent or sibling depending on the users' family situation. The municipal leaders were to be recruited from middle managers with responsibility for specific services to the target group adjacent services with significance for the target group or with responsibility for the allocation of services. Employees had to be recruited among professionals working directly with users in the target group.

A total of 28 respondents were included in the study including nine users seven relatives five employees and seven municipal leaders. The users' main conditions were multiple sclerosis (four users) stroke (three users)

Parkinson’s disease (one user) and optic neuromyelitis (one user). In addition a number of additional conditions were reported i.e. epilepsy diabetes substance abuse and psychiatric symptom pressure. There were six women and three men among the users. As for the relatives there were four women and three men. Four of these were children of a user two were siblings and one was a spouse. Six of these were relatives to one of the included users.

All included employees worked directly with the users in the first municipality in a daycare center (three respondents) and in the second in the municipal physiotherapy service (two respondents). In the latter municipality these two respondents constitute all of the employees in the service aimed directly at the target group. All of the employees were female.

Seven leaders were included in the study three in the first municipality and four in the second. In the first one they were the heads of a daycare center for rehabilitation work and activity and the allocation office. In the latter the heads of home services occupational therapy physiotherapy and the allocation office were included.

Respondents are relatively evenly distributed across the two municipalities. Three different types of relative relationships are represented in the material. The user’s diagnoses cover both acute and progressive conditions and additional secondary diagnoses that frequently occur among people with neurological conditions and can be important for among other things functional level. The data material is therefore understood as trustworthy. Table1 provides an overview of the number of respondents included in the study.

Table 1. Included respondents by type and municipality.

Municipality.	Users	Relatives	Employees	Leaders	Total
1	4	4	3	3	14
2	5	3	2	4	14
Total	9	7	5	7	28

3.2. Data Collection and Analyses

In-depth interviews were used to collect data from service users and relatives. These qualitative interviews seek to understand the world as viewed by the respondent and aim to convey the meaning of people’s experiences and to reveal their experience of the world before scientific explanations (Kvale and Brinkmann2009). The purpose was to understand the informant’s experiences and how the informant reflects on them in accordance with Spradley(1979). In-depth interviews of people with a serious illness or their close relatives touch on topics that often naturally affect the informant’s life situation and in many cases can be perceived as very personal emotional and sensitive. The relationship between informant and researcher in the interview situation is therefore very central and the quality of the interviews is consequently based on the fact that trust has been established between informant and researcher (Tjora2017). To assure this only one interviewer conducted all interviews and started with information about the study including the respondent’s right to withdraw from the study at any time. The interviews were either conducted at the municipality’s premises or at the respondent’s home in accordance with the latter’s own wishes.

Furthermore group interviews were conducted to collect data from municipal leaders and employees. These interviews aimed to generate data based on the synergy of the group interaction in accordance with Green et al.(2003). Due to logistical challenges it was not possible to conduct a group interview with employees in one of the municipalities. These were therefore interviewed individually. A total of 18 in-depth interviews and three group interviews were conducted. This is illustrated in Table2. All interviews had a duration of one to two hours and were conducted in February 2020.

Table 2. Conducted interviews.

Respondents	In-Depth Interviews	Group Interviews	Total
Users	9	-	9
Relatives	7	-	7
Employees	2	1	3
Leaders	-	2	2
Total	18	3	21

A semi-structured interview guide was prepared for each of the respondent categories prior to the data collection. These were the basis for all the interviews. Table3 provides an overview of the topics and subtopics addressed in the interviews. Some topics were only relevant for one or some of the respondent groups (e.g. relation to the user). In these cases the relevant respondents are listed in parentheses.

Table 3. Interview topics.

Main Topics	Background Information	Cognitive Impairments	Received and Needed Services	Interaction between User and Service Providers	Role of Relatives
Sub-topics	Gender, age, family, work, living conditions (users, relatives), relation to the user (relatives), position/function (employees, leaders) Users' diagnoses, cognitive and physical functional level	Expressions of users' cognitive impairments Users' ability and willingness to participate	Users' need for help and services received (users, relatives) Experiences of scope and quality of services (users, relatives)	User involvement and interaction	Perceptions of roles
				Importance of user involvement and influence	Relatives' involvement and interaction with the service provider
				Perceived user influence	Importance of involvement and influence
				Communication/ Information	Perceived influence
				Other municipal facilitation (e.g., individual adaptations)	Barriers/challenges for relatives' involvement
Barriers/challenges for user involvement	Municipal facilitation				

All interviews were audio-recorded and fully transcribed verbatim. Transcriptions were analyzed thematically by a stepwise deductive-inductive analysis in accordance with Tjora(2017) using NVivo. The transcripts were analyzed starting with detailed coding. The codes were then merged and condensed and grouped into fewer categories. These categories were explored further resulting in broad themes. All quotes presented from the interviews are translated from Norwegian to English by the author.

3.3. *Ethical Assessments*

The project was approved by the Norwegian Centre for Research Data (NSD) with project number 866161. Prior to the interviews all included respondents gave a written consent to participate. They were informed about the study and received information about the possibility of withdrawing at any time. The interview recordings were deleted after transcription and all information was anonymized before the transcripts were stored.

4. RESULTS

The following section reports findings from the interview study. First it presents the occurrence of cognitive impairments among the users and how these were expressed in the interaction with the service providers. Second findings on how the service providers facilitate co-creation with these users are presented. Findings on this topic focus on how this actually appeared at the individual level.

4.1. *Occurrence and Expressions of Cognitive Impairments*

In raising the question about cognitive functional level it should be noted that the assessment of cognitive function level described here is not based on formal diagnoses of cognitive function but on the users' cognitive impairments and their effects as described by users relatives employees and leaders.

In the interview data cognitive impairments and expressions of these were described in five out of the nine users. The interviews uncovered that in some cases there was a discrepancy between the users on one hand and relatives and professionals on the other when it came to considering the users' cognitive functional level. In cases where the users were described as significantly cognitively impaired by relatives and employees the users themselves reported that they experienced these impairments to a lesser extent. So the stronger the experience of these impairments was among relatives and employees the less aware the user usually was of the impairment heror himself.

It was also found that the users who did not suffer from any cognitive impairments did not need or receive many services from the municipality beyond participating in a training program. Therefore they had limited interaction with the municipal services. When they did they represented themselves and their interests in an adequate way according to all respondent groups.

Among the users described as having cognitive impairments these were expressed in several different ways directly affecting both the users' ability and willingness to participate in co-creation. In the following these expressions are described briefly and sorted into five main categories.

Five Expressions of Cognitive Impairments

1. Lack of reality orientation and ability to see one's own situation:

Both relatives professionals and managers consistently pointed this out in the interviews. It was demonstrated through descriptions of users having unrealistic expectations of what they can achieve or what can be arranged for them and their inability to take long-term perspectives linked to their own illness situation and future prospects. The latter is related to both rehabilitation and the need for help and services.

2. Difficulty understanding and remembering information:

Respondents in all groups acknowledged these challenges although to a lesser degree among the users as is the case with the expressions of cognitive impairments in general. Two users described how they had realized that they had problems receiving and absorbing information.

3. Inability to make their own choices and see their consequences:

The respondents often pointed out the users' inability to make choices on their own behalf and understanding their consequences. The employees described this as an obstacle for good interaction between user and services and for tailoring the services to the individual user's needs.

4. Problems expressing one's own needs and representing one's own interests:

Lack of ability to process and understand information memory impairments and inability to see future perspectives made this challenging for the users when interacting with the municipalities. The users often described uncertainty about their rights and possibilities regarding services. In addition different levels of speech impairments and even aphasia occurs in the user group adding another obstacle in this regard.

5. Participation can be perceived as demanding stressful and degrading to the user:

Both users and relatives reported this problem. Some users experienced that their needs and wishes regarding the services were not given much consideration. Others described that they just wanted to be done with the meetings because it felt like a load or they felt alone surrounded by all the professionals. Users also described the recognition of not being able to participate in a good way as degrading.

The findings presented above are well known from the literature on cognitive impairments (Hämäläinen and Rosti-Otajärvi 2016; Levin et al.1992;Sharbafshaaer 2018). They are illustrative of challenges that service providers face in co-creation with these users. The following sections describe how service providers handle these challenges and facilitate co-creation with the users.

4.2. *Municipal Facilitation General Procedures and Informal Approaches*

Both municipal leaders and professionals acknowledged the importance of user influence and their competencies concerning their own situation. At the same time they admitted that cognitive impairments are challenging when it comes to adequate user involvement possibly affecting both the value creation process and their outcomes. Findings illustrate that the service providers dealt with this issue through measures following both general overall procedures and approaches that were more informal. Measures following overall procedures included the use of mapping tools and home visits to all new users to map their needs abilities interests and goals. Home visits were highlighted as important to capture information about who the person is. They grounded these approaches on gaining a better knowledge base to ensure that interaction is carried out at a level adapted to the individual user's cognitive abilities. On the more informal side service providers underlined the significance of interpersonal factors. Health care workers explained that building a solid relationship with the user is of great importance describing how it is about creating good contact and being sure that they see the user for who they are. They pointed out that it makes the user feel seen and heard bringing them a long way in laying the ground for fruitful interaction which indicates that trust is the decisive factor in this context. The main reason is that it opens the door to addressing the effects of cognitive impairments such as lack of reality orientation and ability to see one's own situation. As described by one of the employees:

It is a lot about trust. Because then you can move into the slightly difficult conversations. It is also important to proceed cautiously in the difficult conversations. Because it is a form of negative conversation but find something positive in it. Find some positive paths that one can take. However it is difficult very difficult.

Other informal approaches were more characterized by improvisation and ad hoc solutions when challenges arose. An example of this was described in conjunction with review meetings addressing the user's perception of it being demanding stressful and degrading to participate. When realizing that a user feels this way an employee explained that they have a "mini-meeting" in advance. Here the user can talk about what they want to bring to the review meeting reducing stress on the user. They also reported this as strengthening the users' abilities to express their own needs and represent their own interests.

This illustrates how flexibility and the ability to adapt measures to the individual user can be an important tool for the service provider. On the other hand ad hoc measures can also be an expression of dependence on the individual employee rather than institutionalized procedures that ensure the care of the user.

4.3. *The Importance of Information*

In line with Baker's (2006) understanding of health literacy the empirical findings suggest that adequate necessary and adapted information is a critical point in reducing the negative effects of users' cognitive impairments. The importance of adapted information was expressed through the users' difficulties understanding and remembering information. Some of the challenges associated with this point were described as related both to their ability to process information and to memory impairments. A daughter pointed out that the user was able to understand information but short-term memory failure made her forget it all within a short period of time.

She understands. She does. However then she forgets. That short-term memory or whatever you want to say it is completely gone. Because . . . yes at least that is how it feels. Yes it is like I say we can talk about something one day and then she forgets about it the next day.

In the interviews the leaders focused on their responsibility related to adapting information stating that user participation must be based on necessary and sufficient information. Hence the information should be adapted to the abilities of the person who will receive it and must be provided gradually. As put by one of the leaders:

It is foolish of us to pounce on all sorts of information if we see that the person in question does not have the mental capacity to receive or make use of it. Therefore we have to adapt. We must also use the next of kin or the person speaking on their behalf. We have a responsibility for doing that. To find the level and adjust it individually.

Employees and leaders also brought another interesting topic to the table here describing that the users often are quite skilled when it comes to covering up problems regarding memory and understanding. It is uncertain whether this is due to a lack of self-awareness or they are deliberate actions. However it is consistent with the study's findings related to cognitive impairment in general which were recognized to a lesser extent by the users themselves than by the other respondent groups. It also illustrates the users' lacking abilities to see their own situation.

Although the leaders focused on the importance of information several users and relatives described that lack of information in fact was quite problematic and challenging. They related this to different areas such as information about the users and relatives' rights. One of the relatives explained that:

It is about two weeks since we had a meeting with the administration office, about services and offers. I did not know that you could get care pay for example. I have been to several meetings before, including three years ago. However, we have received very little information.

Users described that they felt they had little influence on the services they received and had little faith that they could get more comprehensive services if they expressed a need for it. Other users and relatives explained that they had experienced that decisions about services had been made without the user knowing. They stated that it would be a clear advantage informing the user in advance of the decisions and that the opposite lead to poorer services, frustration, and a feeling of disempowerment.

The health care workers acknowledged that information can be very difficult and underlined the importance of regarding it as an evolving process. To ensure fruitful interaction processes and good and customized outcomes they emphasized the need to adapt the information to the individual user in each case. Explaining to users with low insight and inability to handle information necessitates patience and the need for thorough and repeated explanations; this is especially important when the user lacks the ability to take perspectives linked to their own illness situation and future prospects. A physiotherapist illustrated this with an example case:

I have to go back to it all the time, because she has her own explanatory models for things. Which I have to dismiss or explain away with real explanatory models.

This illustrates the complexity of providing good information and the need for time patience and secure relationships in order to do so.

4.4. *Relatives Valuable Actors in Co-Creation*

When cognitive impairments affected the users' ability to interact properly with the service providers, the study revealed the increasing importance of involving relatives. Users without cognitive impairments did not include their relatives in the interaction with the municipal services to any large extent. On the other hand, when the user suffered from cognitive impairments, the relatives were active and important participants in these processes.

All respondent groups highlighted the importance of including the relatives in these cases. It was found that the relative's most important role in this particular context was to be a representative for the users' interests and

to make sure the user got the information they needed. They did this through participation in meetings and dealing with much, or often most, of the communication with the municipal services on behalf of the user. Both relatives and users related the importance of this to the latter's inability to remember and perceive information and lack of ability to communicate their own needs. One of the users explained that:

I may have received information, but I have not retained it. So now, when I realized that I did not retain it, I started to bring people to meetings and stuff.

Sometimes the relatives had to act as a mediator between the users' perceptions of their own situation and prospects and the municipal actors' perception of the same. This happened in cases where there was a large discrepancy between the users and the service providers' perception of what was realistic. Illustrating an important role in reducing incongruent understandings of reality between the actors, possibly laying the ground for better interaction.

Both users and relatives also pointed out the aspect that the relatives' participation in meetings directly influenced well-being by making the user feel safe. Relatives also questioned if the user actually would have participated on their own without the relative attending.

The professionals working directly with the users acknowledged the importance of involving relatives. As a rule of thumb, the bigger the cognitive challenges, the more important this is. However, they pointed out that this involvement was largely a result of professional judgment in each individual case rather than a consequence of given guidelines, stating that every case is individual, so it would be problematic to standardize the way and degree to which the relatives ought to be involved. A physiotherapist described this as follows:

In a way, you can say how you would do it, but it is based on the patient's challenges and needs. Therefore, everything is individually tailored. It is foolish to have a schematic on someone who has other needs than what the schematic is made for.

Even though the service providers emphasized the importance of involving relatives, both relatives and users in some cases pointed out that relatives are not necessarily invited by the service provider to participate. Instead, this participation often is a result of their own initiatives to do so. This points in the direction of the service providers not always making the appropriate arrangements to involve relatives, despite their important role in this context, suggesting that when this facilitation takes place, it might be a result of individual assessments and initiatives rather than a generalized approach.

5. DISCUSSION

In this section, the findings are discussed with a theoretical backdrop in PSL, focusing on implications of co-creation and value in use.

The findings substantiate that cognitive impairments reduce the users' health literacy and therefore affect both their ability and willingness to participate in co-creation with the service providers. Following Frow et al.(2016), this points to a high risk for ineffective collaboration resulting in value co-destruction if the health care organization's knowledge is communicated poorly, and the knowledge resources of the user and their relatives are inadequate. Based on the understanding that users need to make behavioral or cognitive contributions to co-create value, as pointed out by Zainuddin et al.(2016), the study underlines the critical importance of adequate facilitation to ensure fruitful co-creation and positive value outcomes for these users.

The findings illustrate a comprehensive asymmetry between the service providers and the users when it comes to factors such as knowledge, skills, and expertise to be involved effectively. As pointed out in the literature value realization and fulfillment are dependent on actors being prepared for, and able to make effective use of, the value co-creation opportunity (Grönroos and Voima 2013;Vafeas et al. 2016). Understanding value co-creation as a resource integration process between the provider and the user (Aarikka-Stenroos and Jaakkola 2012;Vargo and Lusch 2008) implicates that facilitation has to reduce this asymmetry to enable the users to participate effectively. Studies have found that asymmetries in health care creates an unequal power relationship between experts and clients (Bloom et al.2008), can constraint the progress of service co-creation (Tung2009), and often are related to information (Barile et al.2014). This study shows that leaders acknowledge the importance of proper and adapted information on one side, while several users and relatives describe the information to be inadequate on the other. This discrepancy demonstrates a deficit in the service providers' facilitation, maintaining or maybe even increasing the asymmetry between the involved actors when it comes to health literacy. One could argue that this finding can be explained through the users' impaired ability to understand and process information and covering up problems regarding memory and understanding. However, because the relatives recognized this more than the users, this argument falls short in this case.

Nevertheless the users' impaired ability to understand and process information is important to understand the complexity and challenges of co-creation in this setting, for example, related to individual adaptation. The

findings verify the importance of customizing service offers to the individual user, as pointed out by the Ministry of Health and Care Services(2019). They also illustrate that this can be a time-consuming process, highly depending on building trustful relationships with the users to fill cognitive gaps through establishing clear and comfortable relationships, as identified by Hironaka and Paasche Orlow(2008).

As individual adaptations and flexible measures are important to facilitate co-creation in this context, it might also indicate a possible problem. Although individual adaptations per se do not directly contradict institutionalized approaches, there are some factors pointing to the dependence of the individual professional, such as the finding that involving relatives was largely a result of individual assessments. Without underestimating the importance of the efforts of the individual service provider, this may represent a challenge leading to inequity in the access to care, as described by Thomson et al.(2005), indicating the importance of institutionalizing procedures for reducing personal dependency. Another aspect of inequity also arises in connection with the role of relatives. All users do not necessarily have relatives that can be involved, and not all relatives have the ability, capacity or wish to be involved (Meld. St. 29 (2012–2013)2013). Therefore despite the important role the relatives can play in this context, it is important to note that the responsibility of proper facilitation still lies with the service provider regardless of whether relatives are involved.

Co-Creation or Co-Destruction of Value in Use?

The study demonstrates the importance of proper facilitation when the users suffer from cognitive impairments for enabling the co-creation of value and increasing the users well-being. As described in the literature, inadequate health-related knowledge, poor self-efficacy perception, and limited ability to handle health information perform as the main determinants of biased patient-provider relationships, determining co-destruction rather than co-creation of value (Osborn et al.2011). It was found that lack of proper facilitation affected value in use negatively in both direct and more indirect ways. The provision of sufficient information serves as an example. Failing here directly affected the users' well-being in a negative way, as perceiving participation as stressful and even degrading, due to inability to participate properly. It also leads directly to frustration and feelings of disempowerment. More indirectly, it was found to hinder the users' ability to co-create, resulting in poorer services in the end. These findings illustrate how failed interaction processes resulted in negative value outcomes through a decline in the users' well-being.

When comparing co-creation to other user groups, it is important to recognize that when the users suffer from cognitive impairments, there is a built-in asymmetry between the involved actors. Reducing this asymmetry through adequate facilitation and enabling the users to co-create is therefore crucial. As supported by the empirical findings, failing to do so can result in co-destruction of value in use.

However, given this asymmetry between the involved actors, a more theoretical implication also arises. Referring to value co-creation as an interactive and dynamic relationship between the involved actors (Osborne2018) lays the ground for the argument that the users

have to be able to interact with the service provider to co-create value. On the other hand, when co-destruction is defined in terms of interaction (Plé and Cáceres2010), it can be argued that it implies that each actor also plays an important role in value co-destruction,

even when all actors do not participate equally (Prior and Marcos-Cuevas2016). As described, the empirical data showed that the service providers sometimes made decisions about services without the user being involved, which again lead to reduced value in use. Pointing to the actual absence of interaction as the main cause for negative value outcomes here, one can ask if value co-destruction is an accurate term in this context. At least, as Hardyman(2017) states, the emphasis on co-destruction of value as a collaborative process, as implied by the term "co," should be carefully considered.

The expressions of cognitive impairments among the users, such as reduced reality orientation, inability to make choices, and problems expressing their needs and representing their own interests, also illustrate that the users do not always have clear pre-determined conceptions of their goals. It can be argued that this has some important implications. First, that co-creating value in this setting presupposes establishing some level of user intent and awareness related to what is valuable for the user itself. This means that the service providers' facilitation must have a basic focus on clarifying the user's own goals to enable goal achievement to take place.

Second, if the users are not cognitively capable to determine what actually is important to themselves, it brings in to question if they are able to consider whether they actually come better or worse off in the end. Because the nature of value in use is the extent to which the user feels better or worse off (Grönroos and Voima2013), this should be taken into consideration. When the users lack cognitive and volitional capacities, they may want relief from hard decisions and the burden of autonomy. Even when they do not want decisions made for them, they may be unable to make them or to make them well (O'Neill1984). In such a case, one needs to ask both who and how one decides what actually is a positive or negative value in use.

Here, one could again point to the role of relatives acting as the users' representatives, in line with Eriksson(2019). However, as described, users do not necessarily have relatives that can be involved. Because the responsibility of facilitation lies with the PSO, this implies a potentially extended facilitator role for the service provider, which suggests the possibility that the service provider might need to play a larger role in deciding what is a positive or negative value outcome when the users are not capable of this themselves.

6. CONCLUSIONS AND LIMITATIONS

This article has discussed how cognitive impairments affect users' ability and willingness to participate in co-creation, how public service providers handle this, and how they can facilitate the creation of value in use. The article contributes to empirical analyses on value creation in the context of vulnerable and unwilling service users in the public sector while also pointing to some theoretical implications of the findings.

The findings substantiate that cognitive impairments reduce the users' health literacy and therefore affect both their ability and willingness to participate in co-creation with the service providers. The study recognizes that there is a built-in asymmetry between the involved actors and that failing to reduce this asymmetry through adequate facilitation by the service providers can result in co-destruction of value in use. However, it is argued, that given the asymmetry between the involved actors, the emphasis on value co-destruction as an interactive, collaborative process should be carefully considered in further research. It is also suggested that the service provider might need to play a larger role in determining what is a positive or negative value in use if the users are not cognitively capable of doing this themselves. This article, therefore, adds to PSL by clearly emphasizing the key role played by PSOs and frontline service staff in facilitating the value creation process, which takes place during service delivery, and the importance of the PSO's communication of information with vulnerable service users.

Even though the sample is understood as trustworthy, there are some limitations to consider. The sample was restricted to users with neurological conditions. It had a limited size and was studied in a Norwegian municipal context, suggesting the need for broader studies in different countries. The way the cognitive impairments are expressed there is also reason to believe that this can affect the users' ability to participate properly in an interview situation. Therefore, the municipalities might have excluded the users with the most severe impairments from the sample to ensure a feasible and fruitful interview situation, resulting in a possible underrepresentation of these users.

Conflicts of Interest:

The author declares no conflict of interest.

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